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PROBLEM TO BE SOLVED: To provide a method for changing the display unit of a schedule and a method for changing a schedule for easily changing the unit of a schedule scale and the schedule.
SOLUTION: The methods include: a cursor display stage for displaying a cursor on a display device; a schedule display stage for displaying the schedule item of the schedule, an event belt which expresses the start and finish of events in the schedule and a schedule scale scaled by a previously decided unit on the display device; a schedule display unit changing stage for changing the unit of the schedule scale by drag and drop of a predetermined range of the schedule scale; and an event belt changing stage for changing the event belt linked with a changed schedule scale. By drag and drop of the predetermined range of the schedule scale, the display unit of the schedule is changed and the schedule is displayed on the display device.
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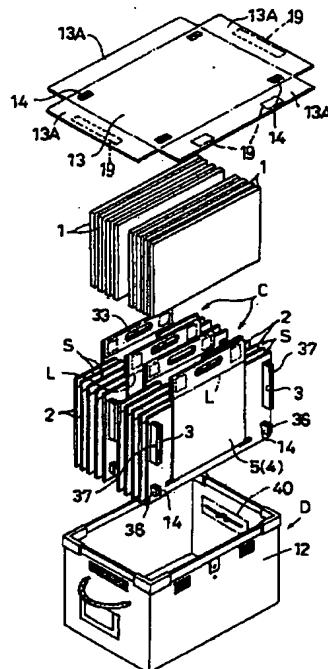
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(54)【発明の名称】 板状物品用収容ケース

(57)【要約】

【課題】運搬時に板状物品ががたつきにくくなるように、かつ、衝撃を受けにくくなるように梱包できながら、板状物品の梱包作業を簡単に行うことができ、その梱包を解いた後に廃棄物が出るのを抑制できて環境の悪化を抑制することができ、さらに、梱包工程の時間短縮を図ることができるようにするとともに、梱包材に要するコストが高くなるのを抑制できるようにして、梱包にかかるコストを低廉化する。

【解決手段】衝撃吸収性を備えた樹脂材から成る複数の仕切り壁2を、所定の間隔を空けて並ぶ状態に、かつ、互いの近接離間移動が許される状態に一对の側壁3に係合させて、複数の板状物品収容空間Sを形成し、板状物品収容空間Sに板状物品を収容した仕切り壁群を、隣合う仕切り壁2同士が近づく方向に締め付け固定する締め付け手段4を設け、締め付け固定状態のケース全体の大きさを、所定の運搬用箱Dに複数個詰め状態で収まる大きさに設定するか、あるいはバックリング材50とともに収容される大きさに設定してある。



【特許請求の範囲】

【請求項 1】 衝撃吸収性を備えた樹脂材から成る複数の仕切り壁を、所定の間隔を空けて並ぶ状態に、かつ、互いの近接離間移動が許される状態に一对の側壁に係合させて、複数の板状物品収容空間を形成し、前記板状物品収容空間に板状物品を収容した仕切り壁群を、隣合う仕切り壁同士が近づく方向に締め付け固定する締め付け手段を設け、その締め付け固定状態のケース全体の大きさを、所定の運搬用箱に複数個詰め状態で収まる大きさに設定するか、あるいはバックング材とともに収容される大きさに設定してある板状物品用収容ケース。

【請求項 2】 前記締め付け手段は、前記板状物品の挿入口とは反対側の各仕切り壁の端部に設けた挿通孔に、衝撃吸収性及び可撓性を備えた帯状体を挿通させるとともに、前記帯状体の長手方向両端部同士を連結する連結部を設けて、前記帯状体の前記仕切り壁群に対する巻付けで前記仕切り壁群を締め付け固定するよう構成してある請求項 1 記載の板状物品用収容ケース。

【請求項 3】 前記帯状体の長手方向の両端部に把持用孔を形成して、連結解除状態の前記帯状体の両端部を把持可能に構成してある請求項 2 記載の板状物品用収容ケース。

【請求項 4】 前記仕切り壁と側壁と帯状体とを樹脂製の段ボール材で形成してある請求項 1, 2, 3 のいずれか一つに記載の板状物品用収容ケース。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は板状物品収容ケースに関する。

【0002】

【従来の技術】例えば偏光フィルムのような精密品を梱包する場合、運搬時に偏光フィルムががたつきにくくなるように、かつ、衝撃を受けにくくなるように梱包しなければならない。

【0003】従来、上記の偏光フィルムを梱包するのに、図 9 に示すように、複数の板状物品としてのフィルム積層体 1（それぞれ数十枚の偏光フィルムを重ね合わせたもの）を複数の成型トレイ 20 に各別に収容し、複数の成型トレイ 20 を上下に重ね合わせ、粘着テープ 21 で成型トレイ 20 同士を動かないように固定し、段ボール箱 22 の底に段ボールパット 23 を敷き、この段ボールパット 23 の上に複数の成型トレイ 20 を載せるとともに、成型トレイ 20 の上に別の段ボールパット 23 を、また、段ボールパット 23 の上にバックング材 24（空気が入った詰め物）を載せ、その状態で段ボール箱 22 の蓋を閉めていた。

【0004】

【発明が解決しようとする課題】上記従来の梱包の手段によれば、複数のフィルム積層体のがたつきをなくすることができるとともに、衝撃を受けにくくすることがで

きるものの、梱包の際に粘着テープの貼りつけ作業や、段ボールパット・バックング材等の段ボール箱への詰め込み作業が必要で梱包作業に手間がかかるという問題があった。

【0005】そして、梱包を解いた後は、粘着テープ・段ボールパット・バックング材等を廃棄することになり、また段ボール箱も数回使用すると廃棄することになって、梱包材にコストがかかるとともに、環境保全の面で好ましくないという問題もあった。

【0006】本発明は上記実情に鑑みてなされたもので、その目的は、運搬時に板状物品ががたつきにくくなるように、かつ、衝撃を受けにくくなるように梱包できながら、板状物品の梱包作業を簡単に行うことができ、その梱包を解いた後に廃棄物が出るのを抑制できて環境の悪化を抑制することができ、さらに、梱包工程の時間短縮を図ることができるようにするとともに、梱包材に要するコストが高くなるのを抑制できるようにして、梱包にかかるコストを低廉化する点にある。

【0007】

【課題を解決するための手段】請求項 1 による発明の構成・作用・効果は次の通りである。

【0008】〔構成〕衝撃吸収性を備えた樹脂材から成る複数の仕切り壁を、所定の間隔を空けて並ぶ状態に、かつ、互いの近接離間移動が許される状態に一对の側壁に係合させて、複数の板状物品収容空間を形成し、前記板状物品収容空間に板状物品を収容した仕切り壁群を、隣合う仕切り壁同士が近づく方向に締め付け固定する締め付け手段を設け、その締め付け固定状態のケース全体の大きさを、所定の運搬用箱に複数個詰め状態で収まる大きさに設定するか、あるいはバックング材とともに収容される大きさに設定してある。

【0009】〔作用〕

〔イ〕複数の板状物品を複数の板状物品収容空間に各別に収容し、締め付け手段で仕切り壁群を隣合う仕切り壁同士が近づく方向に締め付け固定して所定の運搬用箱に収容する。

【0010】〔ロ〕上記のように、締め付け手段で仕切り壁群を隣合う仕切り壁同士が近づく方向に締め付け固定し、しかも、その締め付け固定状態のケース全体の大きさを、所定の運搬用箱に複数個詰め状態で収まる大きさに設定するか、あるいはバックング材とともに収容される大きさに設定してあるから、上記構成の各板状物品用収容ケース（あるいは上記構成の 1 個の板状物品用収容ケース）の運搬用箱内でのがたつき、及び板状物品用収容ケース内での板状物品のがたつき（例えば図 4、図 5 に示すように、板状物品用収容ケースが板状物品 1 で満杯状態の場合）を抑制できる。

【0011】請求項 1 の構成において、「締め付け固定状態のケース全体の大きさを、所定の運搬用箱に複数個詰め状態で収まる大きさに設定する」とは、次の 1) と 2)

のいずれをも意味する。

【0012】1) 上記構成の複数の板状物品用収容ケース群が運搬用箱にぴったりと入り込むように前記ケース全体の大きさを設定すること。

【0013】2) 前記ケース全体の大きさを上記1)の場合よりも少し小さめに設定すること。

【0014】上記1)の場合、運搬用箱に詰め物(クッション材等)を詰め込まなくてもよくなる。これにより、廃棄物(使用後の詰め物)が出なくなる。

【0015】また、上記の2)の場合、運搬用箱に、上記構成の収容ケースの他に1~2個程度の詰め物を詰め込む。この場合、詰め物が1~2個で済むから、詰め物が廃棄物になるとしても、廃棄物の量を少なくすることができる。詰め物を再利用可能な物で構成すれば、廃棄物(使用後の詰め物)が出なくなる。

【0016】締め付け状態のケース全体の大きさを、バック材とともに収容される大きさに設定してある場合、運搬用箱に、上記構成の収容ケースの他にバック材を詰め込むだけでよく、詰め物がバック材だけで済むから、廃棄物の量を少なくすることができる。バック材を再利用可能な物で構成すれば、廃棄物(使用後の詰め物)が出なくなる。

【0017】例えば、板状物品が、複数の偏光フィルムを重ね合わせたフィルム積層体であり、これを工場から客先に運搬する場合、客先からのフィルム積層体の注文数が全ての板状物品収容空間の数より少なく、数個の板状物品収容空間を空にした状態で運搬しなければならないことがある。

【0018】つまり、前記ケース全体の大きさを、運搬用箱に複数個詰め状態で収まる大きさに設定した場合、1個の板状物品用収容ケースが板状物品で満杯にならないことがあるが、各仕切り壁は互いの近接離間移動が許される状態に一对の側壁に係合させてあるから、上記のような場合であっても、空の板状物品収容空間を形成している仕切り壁を、締め付け手段による締め付けで隣合う仕切り壁に近づけて、板状物品に締め付け力を加えることができる。

【0019】このような場合は、板状物品が満杯のときに比べて、仕切り壁群の長さ(仕切り壁が並ぶ方向での仕切り壁群の長さ)が短くなって、そのまま運搬用箱に収容したのでは、運搬用箱の内壁との間に空間ができてしまうが、例えば図7に示すように、繰り返し使用可能なエアバック45(空気を出し入れして大きさを自在に変更調節できるバック)を収容することで、運搬用箱内での板状物品のがたつきを抑制できる。そして上記の状態に運搬する。

【0020】また、前記ケース全体の大きさを、所定の運搬用箱にバック材とともに収容される大きさに設定してある場合において、板状物品用収容ケースが板状物品で満杯にならない場合は、上記のように、空の板状

物品収容空間を形成している仕切り壁を、締め付け手段による締め付けで隣合う仕切り壁に近づけて、板状物品に締め付け力を加えるとともに、そのケースを運搬用箱に収容し、その収容状態で、運搬用箱内に形成される空間に、その空間に対応した大きさのバック材を詰め込むことで、運搬用箱内での板状物品のがたつきを抑制できる。

【0021】[ハ] また、各仕切り壁を衝撃吸収性を備えた樹脂材で形成したことで、運搬時に板状物品に衝撃力が加わりにくくすることができる。

【0022】[ニ] そして衝撃吸収性を備えた樹脂材は一般に耐久性に優れていることから、上記構成の板状物品用収容ケースを繰り返し使用することができる。

【0023】[効果] 従って、上記作用[ロ]、[ハ]により、運搬時に板状物品のがたつきにくくなるように、かつ、衝撃を受けにくくなるように梱包できながら、上記作用[イ]により、板状物品の梱包作業を簡単に行うことができ、その梱包を解いた後に廃棄物が出るのを抑制できて環境の悪化を抑制することができ、さらに上記作用[イ]、[ニ]により、梱包工程の時間短縮を図ることができ、かつ、梱包材に要するコストが高くなるのを抑制できて、梱包にかかるコストを低廉化することができた。

【0024】請求項2による発明の構成・作用・効果は次の通りである。

【0025】[構成] 請求項1による発明の構成において、前記締め付け手段は、前記板状物品の挿入口とは反対側の各仕切り壁の端部に設けた挿通孔に、衝撃吸収性及び可撓性を備えた帯状体を挿通させるとともに、前記帯状体の長手方向両端部同士を連結する連結部を設けて、前記帯状体の前記仕切り壁群に対する巻付けで前記仕切り壁群を締め付け固定するよう構成してある。

【0026】[作用] 請求項1の構成による作用と同様の作用を奏することができるのに加え、次の作用を奏することができる。

【0027】[ホ] 衝撃吸収性及び可撓性を備えた帯状体を仕切り壁群に巻き付け、帯状体の長手方向両端部同士を連結部で連結して仕切り壁群を締め付け固定する。このように、帯状体の仕切り壁群に対する巻付けで仕切り壁群を締め付け固定するから、より確実に仕切り壁群を締め付け固定することができる。

【0028】[ヘ] また、帯状体が衝撃吸収性及び可撓性を備えているから、運搬時に板状物品により衝撃力が加わりにくくすることができる。

【0029】[効果] 従って、請求項1の構成による効果と同様の効果をより得やすくなった。

【0030】請求項3による発明の構成・作用・効果は次の通りである。

【0031】[構成] 請求項2による発明の構成において、前記帯状体の長手方向の両端部に把持用孔を形成し

て、連結解除状態の前記帯状体の両端部を把持可能に構成してある。

【0032】【作用】請求項2の構成による作用と同様の作用を奏することができるのに加え、連結解除状態の前記帯状体の両端部を把持可能に構成してあるから、例えば運搬されてきた運搬用箱を開いて帯状体の両端部の連結を解除した後は、前記両端部を把持して上記構成の板状物品用収容ケースを取り出すことができるとともに、所定の箇所まで運ぶことができる。また、梱包時にも前記帯状体の両端部を把持して運搬用箱に収容することができる。

【0033】【効果】従って、請求項2の構成による効果と同様の効果を奏することができるのに加え、取り扱い性を向上させることができた。

【0034】請求項4による発明の構成・作用・効果は次の通りである。

【0035】【構成】請求項1、2、3のいずれか一つによる発明の構成において、前記仕切り壁と側壁と帯状体とを樹脂製の段ボール材で形成してある。

【0036】【作用】請求項1、2、3のいずれか一つの構成による作用と同様の作用を奏することができるのに加え、前記仕切り壁と側壁と帯状体とを樹脂製の段ボール材で形成してあるから、樹脂材に要するコストを低く抑えることができる。

【0037】【効果】従って、請求項1、2、3のいずれか一つの構成による効果と同様の効果を奏することができるのに加え、梱包にかかるコストをより低廉化することができた。

【0038】

【発明の実施の形態】以下、本発明の実施の形態を図面に基いて説明する。図1、図2、図3に、複数のフィルム積層体1（板状の物品に相当し、50枚の偏光フィルムを重ね合わせたもの）を収容する収容ケースC（板状物品用収容ケースに相当）と、2個の収容ケースCを収容する運搬用箱Dとを示してある。

【0039】前記収容ケースCは、樹脂製の段ボール材（衝撃吸収性及び可撓性を備えた樹脂材に相当）から成る複数の仕切り板2（仕切り壁に相当）を、一定間隔を空けて並ぶ状態に、かつ、互いの近接離間移動が許される状態に、樹脂製の段ボール材から成る一対の側板3（側壁に相当）に係合させて、複数のフィルム積層体収容空間S（板状物品収容空間に相当）を形成し、フィルム積層体1を収容した仕切り板群を、隣合う仕切り板2同士が近づく方向に締め付け固定する締め付け手段4を設けて構成してある。

【0040】前記仕切り板2と側板3とは、仕切り板2側に形成したスリット12に側板3を嵌め込んで組み立てること（つまり係合させることで）、上記のように、隣合う仕切り板2同士の近接離間移動が許されるようにしてある。

【0041】そして、各仕切り板2の底部側（フィルム積層体1の挿入口とは反対の端部側）で、かつ、幅方向両端側に貫通孔35を形成して、この一対の貫通孔列に一対の樹脂フレーム14を各別に挿通させてある。仕切り板2が並ぶ方向で、側板3の両端部と樹脂フレーム14の両端部とに、仕切り板2に対するストッパー37、36を設けてある。

【0042】前記締め付け手段4は、フィルム積層体1の挿入口とは反対側の各仕切り板2の端部に設けた挿通孔11に、樹脂製の段ボール材から成る帯状体5を挿通させるとともに、帯状体5の長手方向両端部同士を重ね合わせて連結する面ファスナー6（連結部に相当）を帯状体5に設けて構成して、帯状体5の仕切り板群に対する巻付けで仕切り板群を締め付け固定するよう構成してある。

【0043】そして前記帯状体5の長手方向の両端側に、幅方向に沿う折り込み線L（詳しくは「くびれ」）を2本ずつ形成し、遊端側の折り込み線L周りに帯状体5を折り曲げると重なる一対の把持用孔33を帯状体5に形成して、連結解除状態の帯状体5の両端部を把持可能に構成してある（図3参照）。前記折れ込み線L周りに折り曲げた帯状体5同士は面ファスナー6で連結する。

【0044】仕切り板2には、フィルム積層体1をフィルム積層体収容空間Sに出し入れしやすいように、挿入口側に凹部7を形成してある。また、最も外側の一対の仕切り板2のうち一方の仕切り板2に窓8を形成して、フィルム積層体1に貼着したラベル（フィルム積層体の種類等を記載してある）を読み取ることができるようにしてある。

【0045】また、フィルム積層体1をフィルム積層体収容空間Sに収容した満杯状態におけるケース全体の大きさ（縦・横・高さ）を、運搬用箱Dに2個詰め状態で収まる大きさに設定してある。

【0046】上記の構造により、図3に示すように、複数のフィルム積層体1を複数のフィルム積層体収容空間Sに各別に収容し、帯状体5を仕切り板群に巻き付け、帯状体5の長手方向両端部同士を重ね合わせて面ファスナー6で連結することで、仕切り板群を締め付け固定する。そして収容ケースCを運搬用箱Dに2個詰め状態で収容する。

【0047】この場合、フィルム積層体1をフィルム積層体収容空間Sに収容した状態におけるケース全体の大きさ（縦・横・高さ）を、運搬用箱Dに2個詰め状態で収まる大きさに設定してあるから、運搬用箱D内でのフィルム積層体1のがたつきを抑制することができる。

【0048】ところで、フィルム積層体1を工場から客先に運搬する場合、1個の収容ケースCがフィルム積層体1で満杯にならないことがあるが、各仕切り板2は互いの近接離間移動が許される状態に一対の側板3に係合

させてあるから、上記のような場合であっても、空のフィルム積層体収容空間Sを形成している仕切り板2を、締め付け手段4による締め付けで隣合う仕切り板2に近づけて、フィルム積層体1に締め付け力を加えることができる。

【0049】このような場合は、フィルム積層体1が満杯のときに比べて、仕切り板群の長さ（仕切り板が並ぶ方向での仕切り板群の長さ）が短くなって、そのまま運搬用箱Dに収容したのでは、運搬用箱Dの内壁との間に空間ができてしまうが、図7に示すように、繰り返し使用可能なエアバック45（空気を出し入れして大きさを自在に変更調節できるバック）を収容することで、運搬用箱D内でのフィルム積層体1のがたつきを抑制できる。（仕切り板群を運搬用箱Dの中央部に寄せ、仕切り板群の両側に2個のエアバック45を配置して、これらに仕切り板群を支持させるようにしてもよい）。

【0050】図3、図5、図6に示すように、前記運搬用箱Dは箱本体12と上蓋13とから成り、上蓋13は、面ファスナー19が付いた2個の短辺側の折り返し部13Aと、面ファスナー19が付いた1個の長辺側の折り返し部13Aと、面ファスナーが付いていない1個の長辺側の折り返し部13Aとを備えている。

【0051】そして、面ファスナー19が付いた3個の折り返し部13Aを箱本体12の上端側に折り重ねて面ファスナー19で固定するとともに、面ファスナーが付いていない1個の長辺側の折り返し部13Aを箱本体12の上端側にリベット（図示せず）で固定する。さらに、面ファスナー19が付いた1個の長辺側の折り返し部13Aと箱本体12の上端側とにわたって封げんタック15をつける。

【0052】図6に示すように、上蓋13の表面の四隅と箱本体12の底面の四隅とに面ファスナー14を4個ずつ設けて、上下に複数の運搬用箱Dを重ねた場合に、対応する面ファスナー14同士が連結状態になって、運搬用箱D同士が位置ずれしにくくなるようにしてある。図6において30は把っ手である。

【0053】この把っ手30は箱本体12の長短の側壁のうち、短い方の側壁に設けてあるが、長い方の側壁にだけ、あるいは、長短のいずれの側壁に設けてあってもよい。把っ手30は、その両端部を、前記側壁に設けた貫通孔に挿通させるとともに、側壁の裏面側に結び、この裏面側の把っ手部分を粘着テープ40で押さえつけて固定してある（図3参照）。このように前記把っ手部分を粘着テープ40で押さえつけ固定することで、把っ手30の両端側の箱本体12内での盛り上がりや抑制できるとともに、前記貫通孔から箱本体12内に異物が侵入するのを回避できる。

【0054】〔別実施形態〕前記締め付け固定状態のケース全体の大きさを、運搬用箱Dに3個詰め状態、あるいはそれ以上の個数詰め状態で収まる大きさに設定してあってもよい。

【0055】前記連結部6を面ファスナー以外のもので構成してあってもよい。また、前記帯状体5を布材で形成してあってもよい。

【0056】図8に示すように、前記締め付け固定状態のケース全体の大きさを、運搬用箱Dにバック材50とともに収容される大きさに設定してあってもよい。

【0057】前記バック材50は、袋体内に空気を供給して膨らませて使用するエアバックと呼ばれるもので、再利用できるように構成することができる。

【0058】以上の実施形態において、前記板状の物品はフィルム積層体に限られるものではなく、例えばガラスであってもよい。

【0059】前記衝撃吸収性を備えた樹脂材としては、発泡ポリエチレンや発泡ポリプロピレンであってもよい。

【図面の簡単な説明】

【図1】フィルム積層体収容ケースと運搬用箱とを示す斜視図

【図2】フィルム積層体収容ケースの各部品を示す図

【図3】フィルム積層体とフィルム積層体収容ケースと運搬用箱とを示す斜視図

【図4】フィルム積層体収容ケースを運搬用箱に収容した状態を示す図

【図5】フィルム積層体収容ケースを運搬用箱に収容した状態を示す図

30 【図6】運搬用箱を示す斜視図

【図7】フィルム積層体の収容状態を示す図

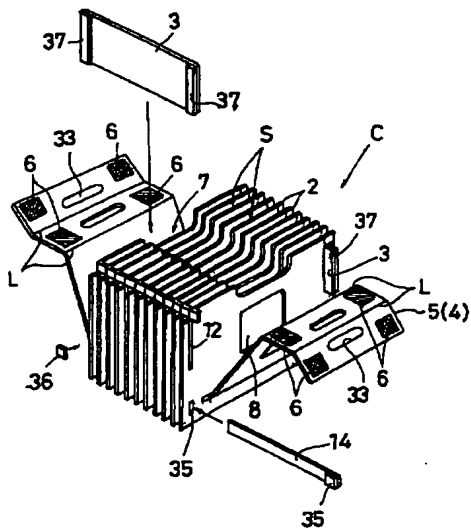
【図8】別実施形態を示す図

【図9】従来の技術を示す図

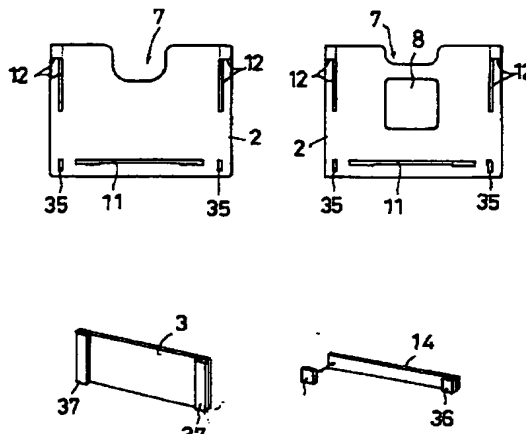
【符号の説明】

1	板状物品
2	仕切り壁
3	側壁
4	締め付け手段
5	帯状体
6	連結部
7	把持用孔
11	挿通孔
33	把持用孔
50	バック材
D	運搬用箱
S	板状物品収容空間

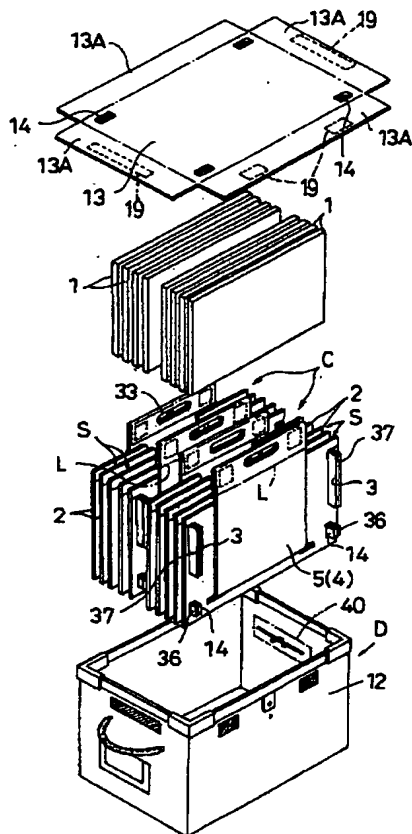
【図1】



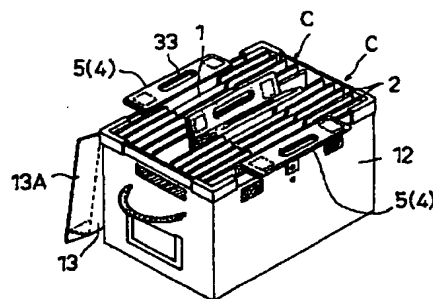
【図2】



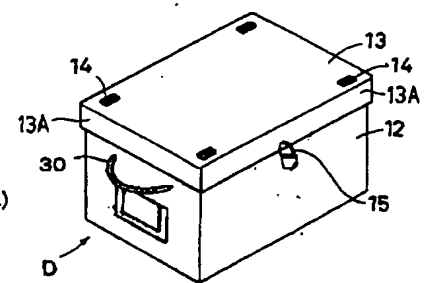
【図3】



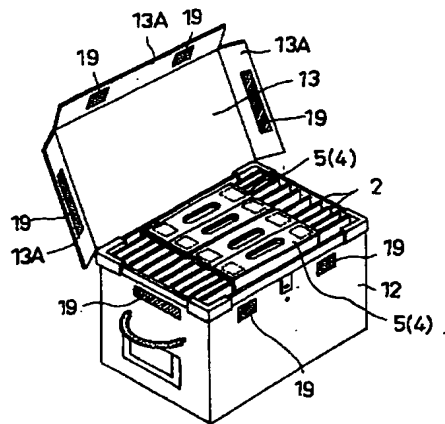
【図4】



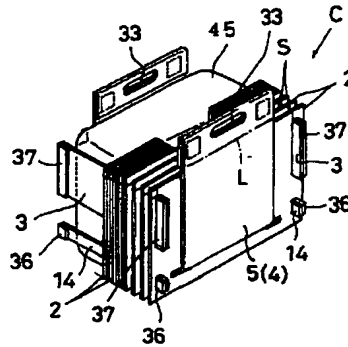
【図6】



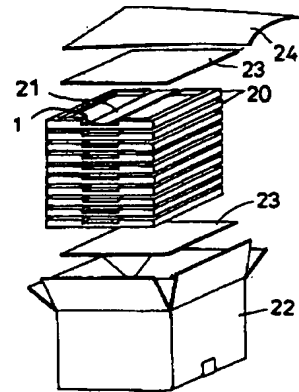
【図5】



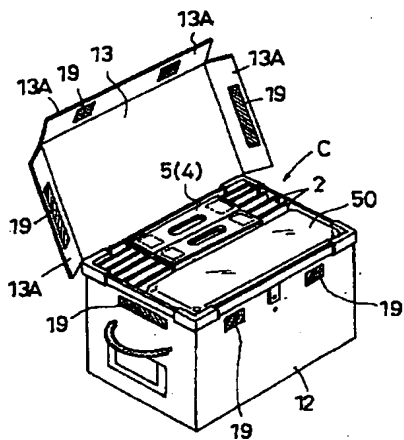
【図7】



【図9】



【図8】



フロントページの続き

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FA10 FA26 GA09

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CLAIMS

[Claim(s)]

[Claim 1] Two or more bridgewalls which consist of the resin material equipped with impact absorptivity in the condition of vacating predetermined spacing and standing in a line The side attachment wall of a pair is made to engage with the condition that migration is allowed. and mutual contiguity -- alienation -- The bridgewall group which formed two or more tabular goods hold space, and held tabular goods in said tabular goods hold space A bolting means to bind tight and fix in the direction in which ***** bridgewalls approach is established. The hold case for tabular goods set as the magnitude which sets the magnitude of the whole case of the bolting fixed condition as the magnitude settled in the predetermined box for conveyance in the state of the final stage, or is held with a packing material. [two or more]

[Claim 2] For insertion opening of said tabular goods, said bolting means is a hold case for tabular goods according to claim 1 constituted so that it may twist and come out, said bridgewall group may be bound tight and it may fix as opposed to [prepare the connection section which connects the longitudinal direction both ends of said band form while making the band form equipped with impact absorptivity and flexibility insert in the insertion hole prepared in the edge of each bridgewall of the opposite side, and] said bridgewall group of said band form.

[Claim 3] The hold case for tabular goods according to claim 2 which forms the hole for grasping in the both ends of the longitudinal direction of said band form, and is constituted possible [grasping of the both ends of said band form of a deconcatenation condition].

[Claim 4] Claims 1 and 2, the hold case for tabular goods of any one publication of three which have formed said bridgewall, side attachment wall, and band form by the corrugated paper material made of resin.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a tabular goods hold case.

[0002]

[Description of the Prior Art] For example, when packing up a precision article like a polarization film, it must pack up so that a polarization film cannot shake easily and may become at the time of conveyance, and so that it may be hard to be shocked and may become.

[0003] Conventionally, as shown in drawing 9, the film layered product 1 (what piled up the polarization film of ten numbers, respectively) as two or more tabular goods is held in two or more molding trays 20 at each ** packing up the above-mentioned polarization film. Two or more molding trays 20 are fixed so that molding tray 20 comrades may not be moved by superposition and adhesive tape 21 up and down. While covering the bottom of a carton box 22 with the corrugated paper putt 23 and carrying two or more molding trays 20 after this corrugated paper putt 23 On the molding tray 20, the packing material 24 (padding containing air) was carried for another corrugated paper putt 23 after the corrugated paper putt 23 again, and the lid of a carton box 22 was shut in the condition.

[0004]

[Problem(s) to be Solved by the Invention] According to the means of the above-mentioned conventional packing, while being able to lose shakiness of two or more film layered products, there was a problem that the attachment activity of adhesive tape and the stuffing activity to carton boxes, such as a corrugated paper putt packing material, were required in the case of packing of the thing which an impact can be made hard to receive, and a packing activity took time and effort.

[0005] And after unpacking packing, while adhesive tape, a corrugated paper putt packing material, etc. will be discarded, and it will discard if a carton box is also used several times and cost started packaging, there was also a problem that it was not desirable in respect of environmental preservation.

[0006] This invention is what was made in view of the above-mentioned actual condition. The purpose Being able to pack up so that tabular goods cannot shake easily and may become at the time of conveyance, and so that it may be hard to be shocked and may become While being able to control that trash comes out, being able to control environmental aggravation and enabling it to aim at time amount compaction of a packing process further after being able to do the packing activity of tabular goods easily and unpacking the packing As it can control that the cost which packaging takes becomes high, it is in the point which makes cost concerning packing cheap.

[0007]

[Means for Solving the Problem] The configuration, an operation, and the effectiveness of invention by claim 1 are as follows.

[0008] Two or more bridgewalls which consist of the resin material equipped with [configuration] impact absorptivity in the condition of vacating predetermined spacing and standing in a line The side attachment wall of a pair is made to engage with the condition that migration is allowed. and mutual contiguity -- alienation -- The bridgewall group which formed two or more tabular goods hold space,

and held tabular goods in said tabular goods hold space A bolting means to bind tight and fix in the direction in which ***** bridgewalls approach is established, and it is set as the magnitude which sets the magnitude of the whole case of the bolting fixed condition as the magnitude settled in the predetermined box for conveyance in the state of the final stage, or is held with a packing material. [two or more]

[0009] [Function]

[**] Hold two or more tabular goods in two or more tabular goods hold space at each **, bind tight with a bolting means in the direction in which ***** bridgewalls approach a bridgewall group, fix, and hold in the predetermined box for conveyance.

[0010] [**] As mentioned above, with a bolting means, bind a bridgewall group tight in the direction in which ***** bridgewalls approach, and fix. And [whether the magnitude of the whole case of the bolting fixed condition is set as the magnitude settled in the predetermined box for conveyance in the state of the final stage, and] [two or more] Or since it is set as the magnitude held with a packing material Shakiness within the box for conveyance of each hold case for tabular goods of the above-mentioned configuration (or one hold case for tabular goods of the above-mentioned configuration), and shakiness of the tabular goods within the hold case for tabular goods (for example, as shown in drawing 4 and drawing 5) The hold case for tabular goods can control the case of a full condition in the tabular goods 1.

[0011] In the configuration of claim 1, all of 1 and 2 of the degree "which sets the magnitude of the whole case of a bolting fixed condition as the magnitude settled in the predetermined box for conveyance in the state of the final stage" are meant. [two or more]

[0012] 1) Set up the magnitude of said whole case so that two or more hold case groups for tabular goods of the above-mentioned configuration enter into the box for conveyance exactly.

[0013] 2) Set up the magnitude of said whole case somewhat more smallish than the case of the above 1.

[0014] In the above 1, it becomes unnecessary to crowd the box for conveyance padding (cushioning material etc.). Trash (padding after use) stops thereby, coming out.

[0015] Moreover, in the case of above 2, about 1-2 padding other than the hold case of the above-mentioned configuration is stuffed into the box for conveyance. In this case, the amount of trash can be lessened though padding turns into trash, since padding can be managed with 1-2 pieces. If constituted from an object which can reuse padding, trash (padding after use) will not come out.

[0016] When having set the magnitude of the whole case of a bolting condition as the magnitude held with a packing material, since padding requires only a packing material, the amount of trash can be lessened that what is necessary is just to stuff the packing material other than the hold case of the above-mentioned configuration into the box for conveyance. If constituted from an object which can reuse a packing material, trash (padding after use) will not come out.

[0017] For example, where tabular goods were the film layered products which piled up two or more polarization films, there were few orders of the film layered product from a user than the number of all tabular goods hold space when carrying this from works to a user, and some tabular goods hold space is emptied, it may have to carry.

[0018] That is, although one hold case for tabular goods may not fill with tabular goods when the magnitude of said whole case is set as the magnitude settled in the box for conveyance in the state of the final stage, [two or more] contiguity with each mutual bridgewall -- alienation, even if it is the above cases since the side attachment wall of a pair is made to have engaged with the condition that migration is allowed The bridgewall which forms empty tabular goods hold space can be brought close to a ***** bridgewall by bolting by the bolting means, it can bind tight on tabular goods, and the force can be applied.

[0019] In such a case, although space will be made between the walls of the box for conveyance in the die length (the die length of the bridgewall group in the direction in which a bridgewall is located in a line) of a bridgewall group having become short, and having held in the box for conveyance as it is compared with the time full of tabular goods For example, as shown in drawing 7 , shakiness of the

tabular goods within the box for conveyance can be controlled by holding repeatedly the usable Ayr pack 45 (pack which takes air and can carry out modification accommodation of the magnitude free). And it carries in the above-mentioned condition.

[0020] Moreover, the magnitude of said whole case is set when having set it as the magnitude held in the predetermined box for conveyance with a packing material. When the hold case for tabular goods does not fill with tabular goods As mentioned above, while bringing the bridgewall which forms empty tabular goods hold space close to a ***** bridgewall by bolting by the bolting means, binding tight on tabular goods and applying the force The case is held in the box for conveyance, and shakiness of the tabular goods within the box for conveyance can be controlled in the state of the hold by stuffing the packing material of the magnitude corresponding to the space into the space formed in the box for conveyance.

[0021] [**] Moreover, impulse force can make it hard to join tabular goods at the time of conveyance by having formed each bridgewall by the resin material equipped with impact absorptivity.

[0022] [**] And from generally excelling in endurance, the resin material equipped with impact absorptivity can repeat and use the hold case for tabular goods of the above-mentioned configuration.

[0023] So that tabular goods cannot shake easily and may become by [Effect] therefore the above-mentioned operation [RO], and [Ha] at the time of conveyance Being able to pack up so that it may be hard to be shocked and may become and according to the above-mentioned operation [I] The packing activity of tabular goods can be done easily, it can control that trash comes out after unpacking the packing, and environmental aggravation can be controlled. Further by the above-mentioned operation [I] and [NI] It could control that the cost which can aim at time amount compaction of a packing process, and packaging takes became high, and cost concerning packing was able to be made cheap.

[0024] The configuration, an operation, and the effectiveness of invention by claim 2 are as follows.

[0025] It constitutes so that said bolting means may prepare the connection section which connects the longitudinal direction both ends of said band form with insertion opening of said tabular goods while making the band form equipped with impact absorptivity and flexibility insert in the insertion hole prepared in the edge of each bridgewall of the opposite side, and may twist and come out of it to said bridgewall group of said band form, said bridgewall group may be bound tight in the configuration of invention by [configuration] claim 1 and it may fix.

[0026] In addition to the ability to do so the operation by the configuration of [operation] claim 1, and the same operation, the next operation can be done so.

[0027] [**] Twist the band form equipped with impact absorptivity and flexibility around a bridgewall group, connect the longitudinal direction both ends of a band form in the connection section, bind a bridgewall group tight and fix. thus, the bridgewall group of a band form is received -- since it twists and comes out, a bridgewall group is bound tight and it fixes, a bridgewall group can be bound tight more certainly and it can fix.

[0028] [**] Moreover, since the band form is equipped with impact absorptivity and flexibility, impulse force can make it hard to be added with tabular goods at the time of conveyance.

[0029] It becomes easier to acquire [Effect] therefore the effectiveness by the configuration of claim 1, and the same effectiveness.

[0030] The configuration, an operation, and the effectiveness of invention by claim 3 are as follows.

[0031] In the configuration of invention by [configuration] claim 2, the hole for grasping is formed in the both ends of the longitudinal direction of said band form, and it constitutes possible [grasping of the both ends of said band form of a deconcatenation condition].

[0032] While being able to grasp said both ends and being able to take out the hold case for tabular goods of the above-mentioned configuration after opening the box for conveyance carried, for example and canceling connection of the both ends of a band form since it constitutes possible [grasping of the both ends of said band form of a deconcatenation condition] in addition to the ability to do so the operation by the configuration of [operation] claim 2, and the same operation, it can carry to a predetermined part. Moreover, the both ends of said band form can be grasped also at the time of packing, and it can hold in the box for conveyance.

[0033] In addition to the ability to do so [Effect] therefore the effectiveness by the configuration of claim 2, and the same effectiveness, handling nature was able to be raised.

[0034] The configuration, an operation, and the effectiveness of invention by claim 4 are as follows.

[0035] In the configuration of invention by any one of the [configuration] claims 1, 2, and 3, said bridgewall, side attachment wall, and band form are formed by the corrugated paper material made of resin.

[0036] Since said bridgewall, side attachment wall, and band form are formed by the corrugated paper material made of resin in addition to the ability to do so the operation by any one configuration of [operation] claims 1, 2, and 3, and the same operation, the cost which resin material takes can be held down low.

[0037] In addition to the ability to do so [Effect] therefore the effectiveness by any one configuration of claims 1, 2, and 3, and the same effectiveness, cost concerning packing was able to be made cheap more.

[0038]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained based on a drawing. The box D for conveyance which holds the hold case C (equivalent to the hold case for tabular goods) and two hold cases C where two or more film layered products 1 (what was equivalent to tabular goods and piled up the polarization film of 50 sheets) are held in drawing 1 , drawing 2 , and drawing 3 is shown.

[0039] Said hold case C two or more diaphragms 2 (equivalent to a bridgewall) which consist of the corrugated paper material made of resin (equivalent to the resin material equipped with impact absorptivity and flexibility) the condition of vacating fixed spacing and standing in a line -- and mutual contiguity -- alienation -- in the condition that migration is allowed It is made to engage with the side plate 3 (equivalent to a side attachment wall) of the pair which consists of the corrugated paper material made of resin. Two or more film layered product hold space S (equivalent to tabular goods hold space) is formed, and a bolting means 4 to bind tight the diaphragm group which held the film layered product 1 in the direction in which ***** diaphragm 2 comrades approach, and to fix is established, and it constitutes.

[0040] said diaphragm 2 and side plate 3 insert in and assemble a side plate 3 to the slit 12 formed in the diaphragm 2 side (by that is, thing made to be engaged) -- above -- contiguity of ***** diaphragm 2 comrades -- alienation -- it is made to be allowed in migration

[0041] And it is the pars-basilaris-ossis-occipitalis side (edge side opposite to insertion opening of the film layered product 1) of each diaphragm 2, and a through tube 35 is formed in a crosswise both-ends side, and the through tube train of this pair is made to have inserted the resin frame 14 of a pair in each **. Towards a diaphragm 2 being located in a line, the stoppers 37 and 36 to a diaphragm 2 are formed in the both ends of a side plate 3, and the both ends of the resin frame 14.

[0042] said bolting means 4 forms and constitutes the surface fastener 6 (equivalent to the connection section) which piles up and connects the longitudinal direction both ends of a band form 5 in a band form 5, and receives the diaphragm group of a band form 5 with insertion opening of a film layered product 1 while it makes the band form 5 which consists of the corrugated-paper material made of resin insert in the insertion hole 11 prepared in the edge of each diaphragm 2 of the opposite side -- it twists and comes out, and it constitutes so that a diaphragm group binds tight and it may fix.

[0043] And the hole 33 for grasping of a pair which will lap if it forms at a time two insertion lines L (in detail "vena contracta") which meet the both-ends side of the longitudinal direction of said band form 5 crosswise and a band form 5 is bent to the circumference of the insertion line L by the side of a free end is formed in a band form 5, and it constitutes possible [grasping of the both ends of the band form 5 of a deconcatenation condition] (refer to drawing 3). Band form 5 comrades bent to the circumference of said crease lump line L are connected with a surface fastener 6.

[0044] The crevice 7 is formed in the insertion opening side so that it may be easy to take the film layered product 1 in and out of a diaphragm 2 in the film layered product hold space S. Moreover, an aperture 8 is formed in one diaphragm 2 among the diaphragms 2 of the outermost pair, and it enables it

to have read the label (for the class of film layered product etc. to be indicated) stuck on the film layered product 1.

[0045] Moreover, the magnitude (length, width, and height) of the whole case in the full condition of having held the film layered product 1 in the film layered product hold space S is set as the magnitude settled in the box D for conveyance in the state of two-piece stuffing.

[0046] According to the above-mentioned structure, as shown in drawing 3, two or more film layered products 1 are held in two or more film layered product hold space S at each **, and a band form 5 is twisted around a diaphragm group, and by piling up the longitudinal direction both ends of a band form 5, and connecting with a surface fastener 6, a diaphragm group is bound tight and it fixes. And the hold case C is held in the box D for conveyance in the state of two-piece stuffing.

[0047] In this case, since the magnitude (length, width, and height) of the whole case in the condition of having held the film layered product 1 in the film layered product hold space S is set as the magnitude settled in the box D for conveyance in the state of two-piece stuffing, shakiness of the film layered product 1 within the box D for conveyance can be controlled.

[0048] By the way, although one hold case C may not fill with the film layered product 1 when carrying the film layered product 1 from works to a user contiguity with each mutual diaphragm 2 -- alienation, even if it is the above cases since the side plate 3 of a pair is made to have engaged with the condition that migration is allowed The diaphragm 2 which forms the empty film layered product hold space S can be brought close to the ***** diaphragm 2 by bolting by the bolting means 4, it can bind tight to the film layered product 1, and the force can be applied.

[0049] In such a case, although space will be made between the walls of the box D for conveyance in the die length (the die length of the diaphragm group in the direction in which a diaphragm is located in a line) of a diaphragm group having become short, and having held in the box D for conveyance as it is compared with the time full of the film layered product 1 As shown in drawing 7, shakiness of the film layered product 1 within the box D for conveyance can be controlled by holding repeatedly the usable Ayr pack 45 (pack which takes air and can carry out modification accommodation of the magnitude free). (A diaphragm group is brought near by the center section of the box D for conveyance, two Ayr packs 45 are arranged on both sides of a diaphragm group, and you may make it make these support a diaphragm group).

[0050] As shown in drawing 3, drawing 5, and drawing 6, said box D for conveyance consisted of the body 12 of a box, and the top cover 13, and the top cover 13 is equipped with clinch section 13A by the side of two shorter sides with a surface fastener 19, clinch section 13A by the side of one long side with a surface fastener 19, and clinch section 13A by the side of one long side where the surface fastener is not attached.

[0051] And while turning up three clinch sections 13A with a surface fastener 19 to the upper limit side of the body 12 of a box and fixing with a surface fastener 19, clinch section 13A by the side of one long side where the surface fastener is not attached is fixed to the upper limit side of the body 12 of a box by the rivet (not shown). Furthermore, the ***** tuck 15 is pickled over clinch section 13A by the side of one long side with a surface fastener 19, and the upper limit side of the body 12 of a box.

[0052] As shown in drawing 6, when it forms four surface fasteners 14 at a time in the four corners of the front face of a top cover 13, and the four corners of the base of the body 12 of a box and two or more boxes D for conveyance are piled up up and down, surface fastener 14 comrades will be in a connection condition, and it is hard to carry out the location gap of the box D for conveyance, and is made to have become. In drawing 6, 30 is a handle.

[0053] Although this handle 30 is formed in the side attachment wall of the shorter one among the side attachment walls of the merits and demerits of the body 12 of a box, you may prepare in the side attachment wall of the longer one, or which side attachment wall of merits and demerits. By the rear-face side of a side attachment wall, the handle part by the side of an epilogue and this rear face is suppressed with adhesive tape 40, and a handle 30 is fixed while making it insert in the through tube which established those both ends in said side attachment wall (refer to drawing 3). Thus, by suppressing said handle part with adhesive tape 40, and fixing, while being able to control the climax

within the body 12 of a box by the side of the both ends of a handle 30, it is avoidable that a foreign matter invades in the body 12 of a box from said through tube.

[0054] [Another operation gestalt] You may set the magnitude of the whole case of said bolting fixed condition as the magnitude settled at the box D for conveyance in the state of a three-piece stuffing condition or number stuffing beyond it.

[0055] It is things other than a surface fastener, and you may constitute said connection section 6. Moreover, said band form 5 may be formed by cloth material.

[0056] As shown in drawing 8 , you may set the magnitude of the whole case of said bolting fixed condition as the magnitude held in the box D for conveyance with a packing material 50.

[0057] Said packing material 50 is called the Ayr pack which supplied, swollen and uses air in a bag body, and it can be constituted so that it can reuse.

[0058] In the above operation gestalt, said tabular goods may not be restricted to a film layered product, and may be glass.

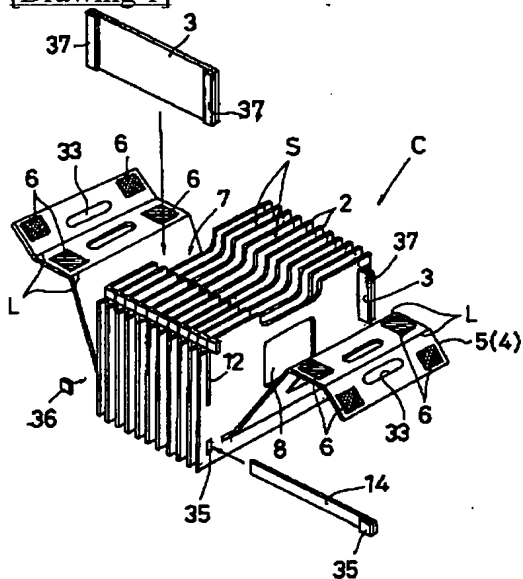
[0059] As resin material equipped with said impact absorptivity, you may be polyethylene foam and polypropylene foam.

[Translation done.]

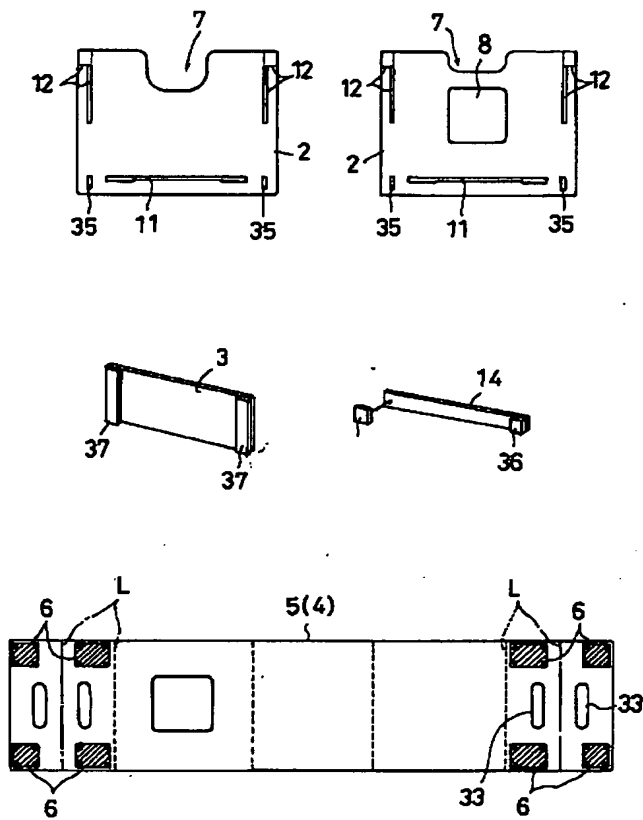
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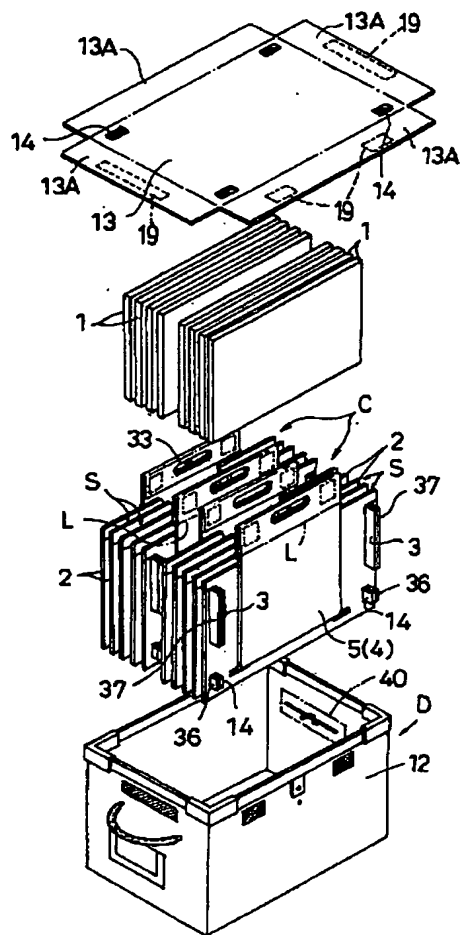
[Drawing 1]



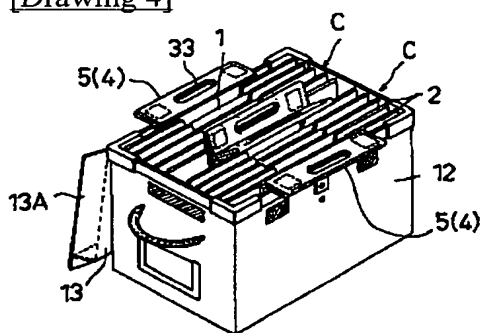
[Drawing 2]



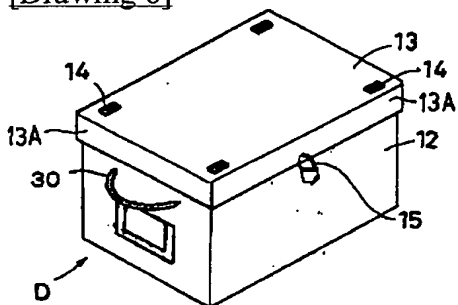
[Drawing 3]



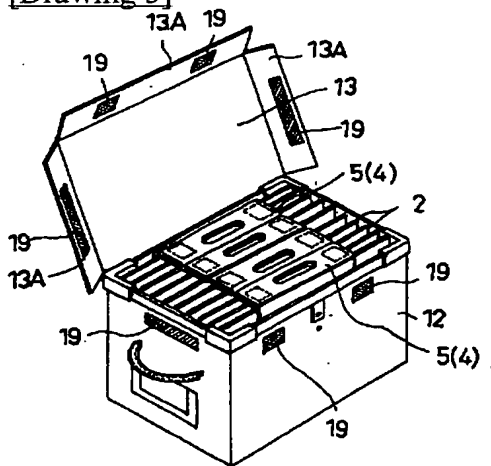
[Drawing 4]



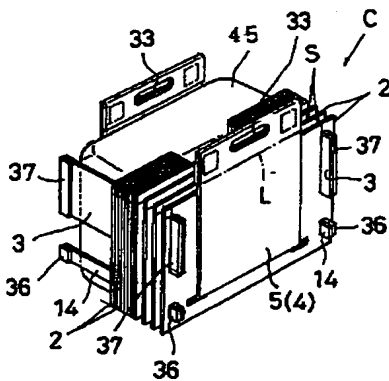
[Drawing 6]



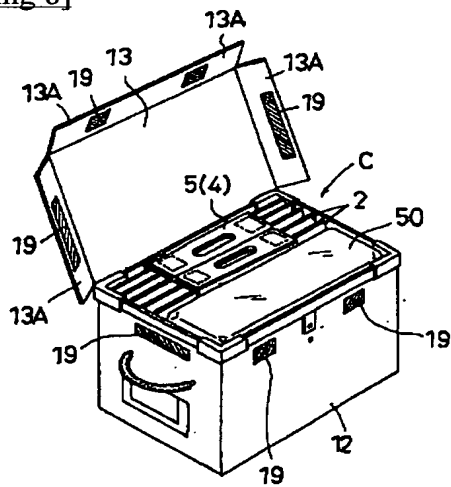
[Drawing 5]



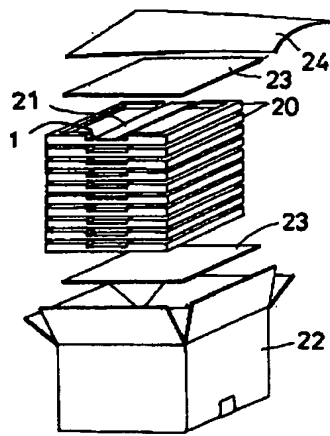
[Drawing 7]



[Drawing 8]



[Drawing 9]



[Translation done.]